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| EXAMINER |
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STEIN, MICHELLE

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| ART UNIT | PAPER NUMBER |
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1771

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/575,330 | <b>Applicant(s)</b><br>MESSER ET AL. |  |
|                              | <b>Examiner</b><br>MICHELLE STEIN    | <b>Art Unit</b><br>1771              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 18-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 26-31 is/are allowed.
- 6) ☒ Claim(s) 1,3-9,18-20,22-25,32 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Examiner acknowledges Applicant's response filed 19 April 2011 containing remarks and amendments to the claims.
2. Claims 1, 3-9 and 18-33 are pending.
3. Claims 21 and 26-31 are allowed. Claims 1, 3-9, 18-20, 22-25 and 32-33 are rejected.
4. The rejections have been updated to reflect the amendments to the claims. The rejections follow.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 32-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Regarding claim 32-33, it is not clear what process steps are performed in the marketing of the refinery blend. It is noted that the preamble states that the method is for marketing, however the steps are drawn to collecting information. It is not seen how the collection of information is a way to market the product.

### ***Claim Rejections - 35 USC § 102/ 35 USC § 103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 3-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Blum (US 5,820,750).

9. Regarding claims 1 and 3-8, Blum teaches a 650°F<sup>+</sup> boiling African crude with a total acid number of 3.02 (column 3, line 41-column 4, line 5).

10. Examiner notes that Blum teaches a composition having the same total acid number as claimed. Furthermore, it is noted that the patentability of composition claims is determined by the properties of the composition, not the steps used to produce the composition. Additionally, it is well known that naphthenic acids generally have molecular weights between 200-700.

11. Therefore, it is expected that the Blum composition will have the same solubility, corrosivity and boiling properties which would result by combining the alpha and beta fraction as claimed, because it has the same acid number range (as indicated in claim 7). It is not seen where the claims distinguish the properties of the composition from that disclosed in Blum.

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12. Alternatively, it would have been obvious to the person having ordinary skill in the art that since the Blum composition has the same total acid number as the composition claimed, that it would have the same solubility, corrosivity and boiling properties which would result by combining the alpha and beta fraction as claimed

13. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

14. Claims 9 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Petersen (US 5,182,013).

15. Regarding claim 9, Petersen teaches a process of reducing naphthenic acid corrosivity by blending oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). It is noted

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that “alpha” and “beta” have been interpreted to mean two different fractions of differing naphthenic acid content. Examiner notes that, “Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.” *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004).”

16. It is expected that the Petersen process would result in the same composition as claimed because the Petersen process blends together an alpha and beta fraction of naphthenic acids in a fashion which is effective to reduce the naphthenic acid corrosivity.

17. In this regard, the Petersen composition of reduced total acid number and thus reduced corrosivity is expected to possess the same properties as claimed.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 18-20 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Petersen (US 5,182,013).

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5. Regarding claims 18-20 Petersen teaches that naphthenic acid constituents in crude oils cause severe corrosion problems in petroleum refining operations (column 1, lines 13-15). One way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). It is noted that "alpha" and "beta" have been interpreted to mean two different fractions of differing naphthenic acid content.

Examiner notes that, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment." *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)."

6. Regarding claims 32 and 33, Petersen teaches that the higher fraction of naphthenic acid content oil is more corrosive, and should be blended with the lower fraction of naphthenic acid content oil which is less corrosive, in order to reduce the corrosivity of the oil (column 1, lines 13-26).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 5,182,013).

10. Regarding claim 22, Petersen teaches the limitations of claim 20, as discussed above.

11. Petersen does not explicitly teach the specific source of the crude oil.

12. However, it would have been obvious to the person having ordinary skill in the art to acquire a refinery feedstock with a certain naphthenic acid corrosivity from Athabasca oil sand crudes, since this is a well known source of oil sand.

13. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman (US 1,986,775) in further view of Petersen (US 5,182,013) .

14. Regarding claims 23-25, Kaufman teaches distilling crudes to produce a lubricating oil fraction containing a substantial fraction of naphthenic acids, and then subjecting to further vacuum distillation to produce lubricating oils substantially free from naphthenic acids and a residual fraction containing organic acid in the form a of non-volatile salts (column 1, lines 40-48).



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15. Kaufman does not explicitly teach combining the lubricating oil substantially free from naphthenic acid (extremely low fraction of naphthenic acid content oil) with the original feedstock.

16. However, in the analogous art of reducing naphthenic acid corrosion, Petersen teaches that one way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26).

17. Therefore, the person having ordinary skill in the art would have been motivated to have blended the Kaufman lubricating oil substantially free from naphthenic acid with the original crude fraction (having a higher fraction of naphthenic acid content), for the benefit of reducing the corrosivity of the crude.

18. Additionally, the person having ordinary skill in the art would readily recognize that this modification would be appropriately carried out through using a recycle loop to blend the lubricating oil with the crude.

***Allowable Subject Matter***

19. Claims 21 and 26-31 are allowed.

20. The following is a statement of reasons for the indication of allowable subject matter:

21. Regarding claim 21, Petersen (US 5,182,013) teaches a process of reducing naphthenic acid corrosivity by blending oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). However, Petersen does not explicitly teach or suggest the molecular weight or

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boiling point or solubility of these fractions. Also, this is opposite of the claimed subject matter, which pertains to increasing the total acid number to reduce the corrosivity.

Petersen does not explicitly teach processing a hydrocarbon feed to increase the ratio of beta naphthenic acids to alpha naphthenic acids.

22. Regarding claims 26-28, Petersen teaches that one way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). This is opposite of the claimed subject matter, which pertains to increasing the total acid number to reduce the corrosivity.

23. Regarding claims 29-31, Petersen does not explicitly teach processing a hydrocarbon feed to increase the ratio of beta naphthenic acids to alpha naphthenic acids.

### ***Response to Arguments***

18. Examiners arguments pertaining to the claim amendments have been addressed by the updated rejections of the claims.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELLE STEIN whose telephone number is (571)270-1680. The examiner can normally be reached on Monday-Friday 8:30AM-5PM EST, Alt Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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